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| 09/804,621 | 03/12/2001 | Serge Willenegger | PA363DIVC1 | 3167 |
| 23696 7590 01/13/2010 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121 | | | EXAMINER WILSON, ROBERT W | |
| | | | ART UNIT | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 09/804,621 | Applicant(s) WILLENEGGER ET AL. | |
| | Examiner ROBERT W. WILSON | Art Unit 2475 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14 and 17-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14 and 17-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. Claims 14 & 17-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton (U.S. Patent No: 5,621,723) further in view of Bae (U.S. Patent No.: 5,832,387) which is an IDS document of record further in view of Raith (U.S. Patent No.: 5,930,706)

Referring to claim 14, Walton teaches: a method in a base station (Base Station per col. 6 line 45 to col. 7 lines 20)

Receiving by a receiver from a single remote station a reverse link signal wherein said reverse link signal that comprises a plurality of combined subchannels (The base station has an inherent receiver in order to receive per col. 6 lines 50-56. The base station receives a reverse link signal which comprises one of 8 subchannels or a channel set which is associated with a data rate or subchannels from a single mobile or single remote station per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 7 line 20. The eight subchannels or channel set can be assigned to a single code; thus, are interpreted as a plurality of combined subchannels signals per col. 3 lines 31 to 46)

adjusting transmit power of a plurality of subchannel signals to different levels by generating power control message for adjusting the transmit power of one or set of subchannel signals (The base station sends power control bits or power control message to the mobile station based upon the comparison of the power to a threshold and so the mobile can adjust the transmit power to the per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20) and

Comparing the power in a channel or set of channels associated with a threshold for said generating said power control message (The base station compares the power in a channel or subchannel or set of channels or set of subchannels to a threshold for in order to generate a power control message per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20)

Walton does not expressly call for: independently adjusting more than one subchannel or Frame Error Rate

Bae teaches: independently adjusting more than one subchannel (The combination of 704, 706, 710 and 712 receive plurality of subchannel measurement relative to SNR and send message for each subchannel which adjust the power of each subchannel separately or independently via 712 per Fig 8 and per col. 4 lines 15 to col. 6 line 45)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add independently adjusting more than one subchannel of Bae in place of the single reverse link channel or subchannel of Walton in order to build a system which has a channel which has multiple channels which can intercommunicate with the base station and improved the performance

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The combination of Walton and Cooper do not expressly call for: frame error rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton and Bae because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel

Referring to claim 17, the combination of Walton, Bae, and Raith teach: the method as recited in claim 14 and Walton further comprising generating a plurality of quality threshold values corresponding to the plurality of subchannel in accordance with the measured signal power for each of the subchannel signals (threshold is generated for each data rate and data rate corresponds to each channel or subchannel per col. 3 line 16 to col. 4 line 45 and per col. 6 line 46 to col. 7 line 20

Walton and Bae do not expressly call for: Frame Error Rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton, Bae, and Raith because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel.

In addition Walton teaches:

Regarding claim 18, further comprising wherein said generating includes generating at least a plurality of bits, wherein each bit represents a command to increase or decrease the transmit power of one of said subchannel signals by a predetermined amount (The inherent bits in the power control message can adjust the power in 1dB step size or predetermined amount per col. 6 lines 46 to 67)

Regarding claim 19, generating a plurality of gain values and applying each gain value to one of said plurality of signal to adjust the transmit power of said subchannel signals (plurality of bits wherein each bit inherently corresponds to a command to increase or decrease the transmit of the transmit power of one of the subchannels by a predetermined amount col. 6 lines 45 to 67.

Referring to claim 20, the combination of Walton, Bae, and Raith teach: the method as recited in claim 14 and Walton teaches: further comprising decoding each of said corresponding subchannel signals and determining frame error in said subchannel signals (The base station has

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inherent decoder for decoding corresponding subchannels and determining the signals power per col. 3 line 16 to col. 4 line 45 and per col. 6 line 46 to col. 7 line 20)

Walton and Bae do not expressly call for: Frame Error Rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton, Raith, and Cooper because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel

Referring to claim 21, Walton teaches: An apparatus for wireless communication (Base Station per col. 6 line 45 to col. 7 lines 20) comprising:

A receiver configured to receive from a single remote station a reverse link signal that comprises a plurality of combined subchannel signals (The base station has an inherent receiver per col. 6 lines 50 to 56 which receives a reverse link signal which comprises one of 8 subchannels or a channel set which is associated with a data rate or subchannels from a single mobile or single remote station per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20. The eight subchannels or channel set can be assigned to a single code; thus, are interpreted as a plurality of combined subchannel signals per col. 3 lines 31 to 46)

A threshold generator configured to provide a power threshold for at least one of the subchannels (The base station generates a threshold for measuring the power from a subchannel per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20)

A comparator configured to compare a power of at least one of the subchannel with a threshold for that subchannel signal (The base station compares the power to at least one threshold for the subchannel per col. 6 lines 45 to 67)

A message generator configured to adjust transmit power of one or more of the plurality of subchannel signals by generating a power control messages based on the comparison (The base station sends power control bits or power control message based upon the comparison per col. 6 lines 45 to 67)

Walton does not expressly call for: independently adjusting more than one subchannel or Frame Error Rate

Bae teaches: independently adjusting more than one subchannel (The combination of 704, 706, 710 and 712 receive plurality of subchannel measurement relative to SNR and send message for each subchannel which adjust the power of each subchannel separately or independently via 712 per Fig 8 and per col. 4 lines 15 to col. 6 line 45)

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It would have been obvious to one of ordinary skill in the art at the time of the invention to add independently adjusting more than one subchannel of Bae in place of the single reverse link channel or subchannel of Walton in order to build a system which has a channel which has multiple channels which can intercommunicate with the base station and improved the performance

The combination of Walton and Cooper do not expressly call for: frame error rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton and Bae because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel

Referring to claim 22, the combination of Walton, Bae, Raith teach: the apparatus for wireless communication and Walton teaches a message generator is configured to generate a plurality of quality threshold values corresponding to the plurality of subchannel in accordance with a measured signal power for each subchannel (threshold is generated for each data rate and data rate corresponds to each channel or subchannel per col. 3 line 16 to col. 4 line 45 and per col. 6 line 46 to col. 7 line 20

Walton and Bae does not expressly call for: Frame Error Rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton, Bae, and Raith because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel.

In addition Walton teaches:

Regarding claim 23, wherein the message generator is configured to generate at least a plurality of bits wherein each bit inherently corresponds to a command to increase or decrease the transmit of the transmit power of one of the subchannels by a predetermined amount (The inherent bits in the power control message can adjust the power in 1dB step size or predetermined amount per col. 6 lines 46 to 67)

Referring to claim 24, the combination of Walton, Bae, and Raith teach: the apparatus for wireless communication of claim 21, Walton teaches: further comprising a decoder configured to decode each of the subchannel signal from the received reverse link signal and wherein the

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comparator is configured to calculate the power in each of the subchannels (The base station has inherent decoder to decode the received reverse link signals per col. 6 lines 45 to 67 and a comparator is configured to calculate the reverse link received power on each subchannel per col. 6 lines 45 to 67

Walton and Bae do not expressly call for: Frame Error Rate

Raith teaches: Frame Error Rate (Frame Error Rate can be substituted for power measurement or channel quality measurement

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton, Bae, and Raith because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel.

Referring to claim 25, Walton teaches: An apparatus for wireless communication (Base Station per col. 6 line 45 to col. 7 lines 20) comprising:

Means for receiving from a single remote station a reverse link signal that comprises a plurality of combined subchannel signals (The Base station has inherent port or means for receiving a reverse link signal which comprises a plurality of channels col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20. The eight subchannels or channel set can be assigned to a single code; thus, are interpreted as a plurality of combined subchannel signals per col. 3 lines 31 to 46)

Means for comparing power of at least one channel or subchannel with a threshold for at least that subchannel signal (The base station compares the power associated with channel or subchannel with a threshold per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20)

means for adjusting transmit powers of one or more of the plurality of channels to different levels by generating a power control message base upon comparison (The base station compares the power to at least one threshold or means for comparing for the subchannel or means per col. 6 lines 45 to 67)

Walton does not expressly call for: independently adjusting more than one subchannel or Frame Error Rate

Bae teaches: independently adjusting more than one subchannel (The combination of 704, 706, 710 and 712 receive plurality of subchannel measurement relative to SNR and send message for each subchannel which adjust the power of each subchannel separately or independently via 712 per Fig 8 and per col. 4 lines 15 to col. 6 line 45)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add independently adjusting more than one subchannel of Bae in place of the single reverse link

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channel or subchannel of Walton in order to build a system which has a channel which has multiple channels which can intercommunicate with the base station and improved the performance

The combination of Walton and Bae do not expressly call for: frame error rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton and Bae because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel

Referring to claim 26, the combination of Walton, Raith, and Bae teach: the apparatus for wireless communication of claim 25 and Walton further comprising means for generating a plurality of quality threshold values corresponding to the plurality of subchannel in accordance with the measured signal power for each of the subchannel signals (threshold is generated for each data rate or means and data rate corresponds to each channel or subchannel per col. 3 line 16 to col. 4 line 45 and per col. 6 line 46 to col. 7 line 20

Walton and Bae do not expressly call for: Frame Error Rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton, Bae, and Raith because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel.

In addition Walton teaches:

Regarding claim 27, further comprising means for generating at least a plurality of bits, wherein each bit represents a command to increase or decrease the transmit power of one of said subchannel signals by a predetermined amount (bits in the power control message can adjust the power in 1dB step size or predetermined amount or means for generating per col. 6 lines 46 to 67)

Referring to claim 28, the combination of Walton, Bae, and Raith teach: the apparatus for wireless communication of claim 25 and Walton teaches: further comprising means for decoding each of said corresponding subchannel signals and determining frame error in said subchannel signals (The base station has inherent decoder for decoding corresponding subchannels and determining the signals power per col. 3 line 16 to col. 4 line 45 and per col. 6 line 46 to col. 7 line 20)

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Walton and Bae do not expressly call for: Frame Error Rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton, Bae, and Raith because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel

Referring to claim 29, Walton teaches: A Base station (Base Station per col. 6 line 45 to col. 7 lines 20) comprising

An antenna (Base Station per Figures 1 and Figures 2 has inherent antenna)

A receiver configured to receive from a single remote station a reverse link signal that comprises a plurality of combined subchannel signals (The base station has an inherent receiver which receives a reverse link signal which comprises one of 8 subchannels or a channel set which is associated with a data rate or subchannels from a single mobile or single remote station per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20. The eight subchannels or channel set can be assigned to a single code; thus, are interpreted as a plurality of combined subchannel signals per col. 3 lines 31 to 46)

A threshold generator configured to provide a power threshold for at least one of the subchannels (The base station generates a threshold for measuring the power from a subchannel per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20)

A comparator configured to compare a power of at least one of the subchannel with a threshold for that subchannel signal (The base station compares the power to at least one threshold for the subchannel per col. 6 lines 45 to 67)

A message generator configured to adjust transmit power of one or more of the plurality of subchannel signals by generating a power control messages based on the comparison (The base station sends power control bits or power control message based upon the comparison per col. 6 lines 45 to 67)

Walton does not expressly call for: independently adjusting more than one subchannel or Frame Error Rate

Bae teaches: independently adjusting more than one subchannel (The combination of 704, 706, 710 and 712 receive plurality of subchannel measurement relative to SNR and send message for

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each subchannel which adjust the power of each subchannel separately or independently via 712 per Fig 8 and per col. 4 lines 15 to col. 6 line 45)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add independently adjusting more than one subchannel of Bae in place of the single reverse link channel or subchannel of Walton in order to build a system which has a channel which has multiple channels which can intercommunicate with the base station and improved the performance

The combination of Walton and Cooper do not expressly call for: frame error rate

Raith teaches frame error rate can be substituted in place of received signal strength (RSS) per col. 18 lines 28 to 49.

It would have been obvious to one of ordinary skill in the art at the time of the invention add FER of Raith in place of measuring signal power of Walton and Bae because both FER and signal power are quality measurements which can be utilized to determine the deterioration of a channel

Response to Amendment

2. Applicant's arguments filed 11/13/09 have been fully considered but they are not persuasive.

The examiner respectfully disagrees with the applicant argument that Walton does not disclose a reverse link comprises a plurality of combined subchannels.

Walton teaches: reverse link comprise a plurality of combine subchannels (The eight subchannels or channel set which are reverse link can be assigned to a single code; thus, are interpreted as a plurality of combined subchannels per col. 3 lines 31 to 46)

The examiner respectfully disagrees that Walton does not teach: receiving from a single remote station a reverse link signal that comprises a plurality of combine subchannel signals

Walton teaches: receiving from a single remote station a reverse link signal that comprises a plurality of combine subchannel signals (The eight subchannels or channel set can be assigned to a single code; thus, are interpreted as a plurality of combined subchannels per col. 3 lines 31 to 46)

Next applicant argues that Bae does not teach: base station receiving from a single remote station a reverse link signal comprising a plurality of combine subchannel signals. Bae does not have to teach a base station receiving from a single remote station a reverse link signal comprising a plurality of combine subchannels because the primary reverse Walton taught this limitation. Refer to the above explanation for details.

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The examiner disagrees with the applicant's argument that because Walton does not need to solve the problem of fading associated with multicarrier transmission that combining the power control of Bae is not proper. Solving the problem of fading associated with a multicarrier system is not the motivation that the examiner used to combine the references and therefore is not persuasive.

Next the applicant argues that Raith does not disclose or suggest the features of receiving from a single remote station a reverse link signal that comprises a plurality of subchannel signals and independently adjusting transmit power of more than one of the plurality of subchannels signals to different levels by generating a power control message for adjusting the transmit power of more than one of said plurality of subchannel signals. The combination of Walton and Bae teach this limitation so Raith alone does not need to teach the limitation.

Walton teaches: receiving from a single remote station a reverse link signal that comprises a plurality of combined subchannel signals (The base station has an inherent receiver which receives a reverse link signal which comprises one of 8 subchannels or a channel set which is associated with a data rate or subchannels from a single mobile or single remote station per col. 3 line 15 to col. 4 line 45 and per col. 6 line 46 to col. 67 line 20. The eight subchannels or channel set can be assigned to a single code; thus, are interpreted as a plurality of combined subchannel signals per col. 3 lines 31 to 46)

A message generator configured to adjust transmit power of one or more of the plurality of subchannel signals by generating a power control messages based on the comparison (The base station sends power control bits or power control message based upon the comparison per col. 6 lines 45 to 67)

Walton does not expressly call for: independently adjusting more than one subchannel or Frame Error Rate

Bae teaches: independently adjusting more than one subchannel (The combination of 704, 706, 710 and 712 receive plurality of subchannel measurement relative to SNR and send message for each subchannel which adjust the power of each subchannel separately or independently via 712 per Fig 8 and per col. 4 lines 15 to col. 6 line 45)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add independently adjusting more than one subchannel of Bae in place of the single reverse link channel or subchannel of Walton in order to build a system which has a channel which has multiple channels which can intercommunicate with the base station and improved the performance

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Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT W. WILSON whose telephone number is (571)272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on 571/272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert W Wilson/
Primary Examiner, Art Unit 2475

RWW
1/05/10